Integración de funciones trigonométricas

Resolver las siguientes integrales aplicando la técnica de cambio de variable e integración trigonométrica:

1. $\int \operatorname{sen}(13x)\,dx$
2. $\int \cos(4x)\,dx$
3. $\int \tan(4-9x)\,dx$
4. $\int \cot(17x+6)\,dx$
5. $\int \sec(11x+12)\,dx$
6. $\int \csc(1-5x)\,dx$
7. $\int (x-5)\tan(x^2-10x+1)\sec(x^2-10x+1)\,dx$
8. $\int (3x+3)\cos(5x^2+10x+10)\,dx$
9. $\int (2x-3)\tan(7x^2-21x+9)\,dx$
10. $\int (x^2+6x)\cot(x^3+9x^2-15)\,dx$
11. $\int (6x^2-6x+3)\sec^2(8x^3-12x^2+12x-13)\,dx$
12. $\int \operatorname{sen}^4(7x-2)\,dx$
13. $\int \cos^3(9x)\,dx$
14. $\int \cos^5(9-11x)\,dx$
15. $\int \tan^3(7x+8)\,dx$
16. $\int \cot^5(12x)\,dx$
17. $\int \sec^4(13x)\,dx$
18. $\int \sec^2(6x+17)\,dx$
19. $\int \csc^4(9x)\,dx$
20. $\int \operatorname{sen}^3(5x)\cot(5x)\,dx$
21. $\int \tan^3(9x)\sec^2(9x)\,dx$
22. $\int \tan(8x)\operatorname{sen}(8x)\cot(8x)\,dx$
23. $\int \tan(3x)\cot(3x)\sec(3x)\csc(3x)\,dx$
24. $\int \dfrac{dx}{1-\operatorname{sen}(5x)}$
25. $\int \dfrac{\cos(9x)\,dx}{\sec(9x)-\tan(9x)}$
26. $\int \dfrac{\tan(4x)dx}{\csc(4x)+\cot(4x)}$
27. $\int \dfrac{\cos(10x)\,dx}{\sec(10x)-\tan(10x)}$
28. $\int \dfrac{\cos(8x)}{1-\cos(8x)}dx$
29. $\int \dfrac{dx}{\csc^2(6x)-\csc(6x)}$

Sustitución trigonométrica

Resuelva las siguientes integrales aplicando la técnica de sustitución trigonométrica:

1. $\int \frac{1}{x\sqrt{9+x^2}}\,dx$
2. $\int \frac{x}{\sqrt{4-x^2}}\,dx$
3. $\int \frac{1}{x^2\sqrt{x^2-25}}\,dx$
4. $\int \frac{\sqrt{x^2-16}}{x}\,dx$
5. $\int \frac{1}{\sqrt{2+x^2}}\,dx$
6. $\int \frac{1}{x^2\sqrt{4-x^2}}\,dx$
7. $\int \frac{x^2}{\sqrt{9-x^2}}\,dx$
8. $\int x^3\sqrt{1-x^2}\,dx$
9. $\int x^3\sqrt{x^2+1}\,dx$
10. $\int x^3\sqrt{x^2-1}\,dx$
11. $\int \frac{x^3}{\sqrt{9-x^2}}\,dx$
12. $\int \frac{x^3}{\sqrt{x^2-9}}\,dx$
13. $\int \frac{x^3}{\sqrt{9+x^2}}\,dx$
14. $\int \frac{\sqrt{x^2+4}}{x^4}\,dx$
15. $\int \frac{x^2}{\sqrt{4-x^2}}\,dx$
16. $\int \frac{dx}{x^4\sqrt{x^2-4}}$
17. $\int \frac{\sqrt{a^2-x^2}}{x^4}\,dx$
18. $\int \frac{\sqrt{a^2+x^2}}{x^3}\,dx$
19. $\int x^2\sqrt{a^2-x^2}\,dx$
20. $\int \sqrt{4-x^2}\,dx$
21. $\int \frac{\sqrt{25-16x^2}}{x}\,dx$
22. $\int \frac{x^4}{\sqrt{(1-x^2)^3}}\,dx$
23. $\int \frac{dx}{x^2\sqrt{9-x^2}}$
24. $\int \frac{\sqrt{x^2-4}}{x}\,dx$
25. $\int \frac{x^3dx}{\sqrt{4-9x^2}}$
26. $\int \frac{dx}{x\sqrt{9+4x^2}}$
27. $\int \frac{dx}{(\sqrt{16+x^2})^4}$
28. $\int \frac{x^2}{\sqrt{2x-x^2}}\,dx$
29. $\int \frac{e^x}{\sqrt{1+e^{2x}}}\,dx$
30. $\int \frac{dx}{(1+x^2)^2}$
31. $\int \frac{dx}{(4x-x^2)^{3/2}}$
32. $\int \frac{dx}{(4x^2-24x+27)^{3/2}}$
33. $\int \frac{dx}{x^2-1}$
34. $\int \frac{\ln x\,dx}{x\sqrt{1-4\ln x-(\ln x)^2}}$
35. $\int \frac{dx}{(x-1)\sqrt{x^2-3x+2}}$

Fracciones Simples

Resuelva las siguientes integrales aplicando la técnica de fracciones simples:

1. $\int \frac{(2x+3)\,dx}{(x-2)(x+5)}$
2. $\int \frac{x\,dx}{(x+1)(x+2)(x+3)}$
3. $\int \frac{x\,dx}{x^3-3x+2}$
4. $\int \frac{x^2\,dx}{x^4+1}$
5. $\int \frac{dx}{(x+1)(x^2+1)^2(x+2)^2}$
6. $\int \frac{x^4\,dx}{(x^2+3)^2}$
7. $\int \frac{(x+1)\,dx}{(x^2-1)^2}$
8. $\int \frac{dx}{x^4-2x^3}$
9. $\int \frac{x^2\,dx}{(x^2+2x+2)^2}$
10. $\int \frac{dx}{x^3-1}$
11. $\int \frac{dx}{(x^3-1)^2}$
12. $\int \frac{dx}{(x+a)(x+b)}$
13. $\int \frac{x^2-5x+9}{x^2-5x+6}dx$
14. $\int \frac{dx}{(x-1)(x+2)(x+3)}$
15. $\int \frac{dx}{x(x+1)^2}$
16. $\int \frac{x^3-1}{4x^3-x}\,dx$
17. $\int \frac{dx}{x^3+1}$
18. $\int \frac{dx}{x^4+x^2+1}$
19. $\int \frac{x^4}{x^4-1}\,dx$
20. $\int \frac{2x-3}{x^2-3x+2}\,dx$
21. $\int \frac{dx}{(1+x^2)^2}$
22. $\int \frac{x^3+x+1}{x(x^2+1)}\,dx$
23. $\int \frac{5x^3+2}{x^3-5x^2+4x}\,dx$